

What is claimed is:

1. A molecule comprising an organism targeting agent covalently attached to a channel forming moiety.
2. The molecule of claim 1, wherein said molecule is a polypeptide.
3. The polypeptide of claim 2, wherein said channel forming moiety is a channel forming polypeptide or a channel forming fragment thereof.
4. The polypeptide of claim 3, wherein said channel forming polypeptide, or channel forming fragment thereof, is selected from the group consisting of: α -hemolysin, diphtheria toxin, delta toxin, anthrax toxin, and colicin.
5. The polypeptide of claim 3, wherein said channel forming polypeptide, or channel forming fragment thereof, is colicin.
6. The polypeptide of claim 5, wherein said colicin is selected from the group consisting of E1, Ia, Ib, A, B and N.
7. The polypeptide of claim 6, wherein said colicin is colicin Ia.
8. The polypeptide of claim 7, wherein said channel forming fragment of colicin Ia is selected from the group consisting of amino acid residues 544-626 and 524-626.
9. The molecule of claim 1, wherein said organism targeting agent is selected from the group consisting of a ligand, an antibody, or fragment thereof, a phage segment, and a pheromone.
10. The polypeptide of claim 2, wherein said organism specific targeting agent is selected from the group consisting of an antibody, a fragment thereof, and a pheromone.

11. The polypeptide of claim 10 wherein said organism specific targeting agent is a pheromone.

12. The polypeptide of claim 11, wherein said pheromone is from an organism selected from the group consisting of: *Staphylococcus*, *Enterococcus*, and *Streptococcus*.

13. The polypeptide of claim 12, wherein said pheromone is from *Staphylococcus*.

14. The polypeptide of claim 13, wherein said *Staphylococcus* is *Staphylococcus aureus*.

15. The polypeptide of claim 14, wherein said *Staphylococcus aureus* pheromone is AgrD.

16. The polypeptide of claim 12, wherein said pheromone is from *Streptococcus*.

17. The polypeptide of claim 13, wherein said *Streptococcus* is *Streptococcus pneumoniae*.

18. The polypeptide of claim 14, wherein said *Streptococcus pneumoniae* pheromone is CSP.

19. The polypeptide of claim 12, wherein said pheromone is from *Enterococcus*.

20. The polypeptide of claim 13, wherein said *Enterococcus* is *Enterococcus faecalis*.

21. The polypeptide of claim 14, wherein said *Enterococcus faecalis* pheromone is cCF10.

22. The polypeptide of claim 2, wherein said organism targeting agent is C-terminal to said channel forming moiety.
- 5 23. The polypeptide of claim 2, wherein said organism specific targeting agent is N-terminal to said channel forming moiety.
24. The polypeptide of claim 10, wherein said organism specific targeting agent is an antibody or a reconstituted antibody mimetic.
- 10 25. The polypeptide of claim 24, wherein said antibody, reconstituted antibody mimetic, is specific for a polypeptide expressed by a virus.
26. The polypeptide of claim 25, wherein said antibody is an ScFv.
- 15 27. The polypeptide of claim 26, wherein said ScFv is HBV PreS1 or HBV HBsAg.
28. A polypeptide comprising the *Staphylococcus aureus* pheromone AgrD and a channel forming domain of colicin.
- 20 29. The polypeptide of claim 28, wherein said channel forming domain of colicin comprises residues 544-626 of colicin Ia.
- 25 30. A polypeptide comprising the *Streptococcus pneumoniae* pheromone CSP and a channel forming domain of colicin.
31. The polypeptide of claim 30, wherein said channel forming domain of colicin comprises residues 544-626 of colicin Ia.
- 30 32. A polypeptide comprising the *Enterococcus faecalis* pheromone cCF10 and a channel forming domain of colicin.
33. The polypeptide of claim 32, wherein said channel forming domain of colicin comprises residues 544-626 of colicin Ia.

- 5 34. A polypeptide comprising an organism targeting moiety selected from the group consisting of HBV HBsAg ScFV, PreS1 ScFV, a reconstituted antibody mimetic of HBV HBsAg ScFV and a reconstituted antibody mimetic of PreS1 ScFV, and a channel forming domain of colicin.
35. The polypeptide of claim 34, wherein said channel forming domain of colicin comprises residues 544-626 of colicin Ia.
- 10 36. A polypeptide comprising the *Candida Albicans* alpha mating pheromone and a channel forming domain of colicin.
37. The polypeptide of claim 34, wherein said channel forming domain of colicin comprises residues 544-626 of colicin Ia.
- 15 38. The polypeptide of any of claims 2-35, comprising non-natural amino acid residues.
39. The polypeptide of claim 38, wherein said non-natural amino acid residues are amino acid analogs, or mimetics.
- 20 40. The polypeptide of claim 38, wherein said non-natural amino acid residues are D-isomers of natural amino acid residues.
- 25 41. A nucleic acid molecule encoding the polypeptide of any of claim 2-35.
42. A vector comprising the nucleic acid molecule of claim 41.
43. A host cell comprising the vector of claim 42.
- 30 44. The host cell of claim 43, wherein said host cell is an E. coli cell.
45. The host cell of claim 43, wherein said host cell is a mammalian cell.

46. A method of producing the polypeptide of any of claims 2-35,
comprising:

culturing the host cell of claim 43;
such that said polypeptide is produced.

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47. The method of claim 46, further comprising purifying said polypeptide.

48. A method of producing the molecule of claim 1, wherein said organism
targeting agent and said channel forming moiety are produced separately and
covalently linked after production.

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49. The method of claim 48, wherein said channel forming moiety is
produced recombinantly.

50. A method of treating a subject having a bacterial infection,
comprising:
administering to said subject an effective amount of a polypeptide
comprising an organism targeting agent and a channel forming moiety;
thereby treating said subject.

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51. The method of claim 50, wherein said organism targeting agent is
selected from an antibody, an antibody fragment, a reconstituted antibody
mimetic, and a pheromone.

52. The method of claim 51, wherein said pheromone is a bacterial
pheromone.

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53. The method of claim 52, wherein said bacterial pheromone is from a
bacteria selected from the group consisting of: *Staphylococcus*, *Enterococcus*
and *Streptococcus*.

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54. The method of claim 53, wherein said bacterial pheromone is selected
from the group consisting of AgrD I, AgrD II, AgrD III, AgrD IV, cCF10,
and CSP.

55. The method of claim 53, wherein said channel forming moiety is selected from the group consisting of α -hemolysin, delta toxin, anthrax toxin, and colicin, or a channel forming domain thereof.

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56. The method of claim 55, wherein said colicin or fragment of colicin is selected from the group consisting of colicin. E1, Ia, Ib, A, B and N.

57. The method of claim 55, wherein said colicin is colicin Ia.

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58. The polypeptide of claim 57, wherein said fragment of colicin is selected from the group consisting of amino acid residues 544-626 and 524-626.

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59. A method of treating a subject having a fungal infection, comprising:

administering to said subject an effective amount of a polypeptide comprising an organism targeting agent and a channel forming moiety; thereby treating said subject.

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60. The method of claim 59, wherein said organism targeting agent is selected from an antibody, a fragment thereof, and a pheromone.

61. The method of claim 60 wherein said organism targeting agent is a pheromone.

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62. The method of claim 61, wherein said pheromone is the *C. albicans* alpha mating pheromone.

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63. The method of claim 62, wherein said pheromone has the amino acid sequence GFRLTNFGYFEPG.

64. The method of claim 59, wherein said channel forming moiety is selected from the group consisting of α -hemolysin, delta toxin, anthrax toxin, and colicin, or a channel forming domain thereof.
- 5 65. The method of claim 64, wherein said colicin or fragment of colicin is selected from the group consisting of colicin. E1, Ia, Ib, A, B and N.
66. The method of claim 65, wherein said colicin is colicin Ia.
- 10 67. The polypeptide of claim 66, wherein said fragment of colicin is selected from the group consisting of amino acid residues 544-626 and 524-626.
- 15 68. A method of treating a subject having a viral infection comprising;
administering to said subject an effective amount of a polypeptide comprising an organism targeting agent and a channel forming moiety; thereby treating said subject.
- 20 69. The method of claim 68, wherein said organism targeting agent is selected from an antibody, a reconstituted antibody mimetic, an antibody fragment, and a ScFv.
- 25 70. The method of claim 69, wherein said organism targeting agent is a reconstituted antibody mimetic.
71. The method of claim 70, wherein said reconstituted antibody mimetic is derived from HBV PreS1 or HBV HBsAg ScFV.
- 30 72. The method of claim 68, wherein said channel forming moiety is selected from the group consisting of α -hemolysin, a fragment of α -hemolysin, colicin, and a fragment of colicin.

73. The method of claim 72, wherein said colicin or fragment of colicin is selected from the group consisting of E1, Ia, Ib, A, B and N.

74. The method of claim 73, wherein said colicin is colicin Ia.

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75. The polypeptide of claim 74, wherein said fragment of colicin is selected from the group consisting of amino acid residues 544-626 and 524-626.

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76. A polypeptide comprising a pheromone and a channel forming domain of colicin.